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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,972	09/05/2002	Kuei-Chun Teng	FTCP0009USA	7019

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EXAMINER

TSE, YOUNG TOI

ART UNIT PAPER NUMBER

2637

DATE MAILED: 01/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/064,972	<b>Applicant(s)</b> TENG ET AL.	
	<b>Examiner</b> YOUNG T. TSE	<b>Art Unit</b> 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because the block pertaining element (52) shown in Figure 2 needs to have descriptive label in conformance with 37 CFR 1.84(n) and 1.84(o). For example, a descriptive label of "Control Circuit" should be inserted into Figure 2 to properly describe element (52). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

**The abstract is not limited to a single paragraph on a separate sheet. For example, page 2 of the abstract includes "FIGURES" which should be deleted.**

3. The disclosure is objected to because of the following informalities: in paragraph [0004], line 4, "Today"s" seems to read "Today's"; in paragraph [0005], line 1 and paragraph [0018], line 1, "Please refer" should be "Referring"; in paragraph [0006], lines 11 and 13 and paragraph [0019], lines 11 and 13, the phrase "is equal to VoutP VoutN" is not understood; in paragraph [0007], lines 3 and 5-6 and paragraph [0023], lines 7-8 and 12, the phrases "247mv 454mv", "300mv 600mv" and "100mv 400mv" should be "247mv-454mv", "300mv-600mv" and "100mv-400mv", respectively; in paragraph [0019], line 3, "22" should be "62"; in paragraph [0021], lines 6-7, the phrase "a single control indicator can be used to select between to outputted current levels" is not understood; and in paragraph [0022], the discussion of the control circuit 80 seems not

correspond to the disclosure of Figure 3 (also see paragraph [0023], lines 5 and 9 for the summation of currents  $I_1$ ,  $I_2$  and  $I_3$ ). Appropriate correction is required.

### ***Claim Objections***

4. Claims 5-7 and 9-12 are objected to because of the following informalities:

In claim 5 (line 3), claim 6 (line 4), claim 10 (lines 2-3), claim 11 (line 2) and claim 12 (lines 2-3), the phrase "inputted data" should be "the inputted data".

In claim 7, line 4, "the control indicator" should be "the first control indicator".

In claim 9, line 3, "an voltage" should be "a voltage"; line 5, "a first input" should be "an input"; line 6, "the control circuit generating the electrical bias" should be "generating the electrical bias from the control circuit", line 7, delete the word "first"; and line 8, "a voltage" should be "the voltage".

In claim 12, line 3, "electrical bias" should be "the electrical bias".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification seems not clarify plain how to incorporate the control circuit (80) of Figure 3 into the control circuit (52) of the present invention of Figure 2 in order to control the electrical bias (PBIAS and NBIAS) as recited in claims 1-12.

According to the present invention shown in Figure 2, the control circuit 52 includes two inputs (control A and control B) and two outputs (PBIAS and NBIAS), however, as shown in Figure 3, the detailed embodiment of the control circuit (52) uses a different reference sign (80) and includes four control indicators (A, B, C and D) for controlling the current sources  $I_1$ ,  $I_2$  and  $I_3$  and a current source connected to the ground 96, wherein the electrical bias (PBIAS and NBIAS) appears operate independent of the control indicators (A, B, C and D).

Further, the configuration of independent claims 1 and 9 does not correspond to the disclosure of Figures 2 and 3 since claims 1 and 9 recite the control circuit (80) being capable of outputting the electrical bias (PBIAS and NBIAS) at different levels according to the first control indicator (single control indicator). As mentioned earlier in Figure 3, the electrical bias (PBIAS and NBIAS) are operated independent of the control indicators (A, B, C and D), therefore, the first control circuit is not capable of outputting the electrical bias (PBIAS and NBIAS) at different levels according to the first control indicator.

Furthermore, even the first control circuit is capable of outputting the electrical bias (PBIAS and NBIAS) at different levels as claimed and the electrical bias (PBIAS

and NBIAS) are not operated independent of the control indicators (A, B, C and D), the first control circuit is still not capable of outputting the electrical bias (PBIAS and NBIAS) at different levels according to the first control indicator (single control indicator A, B, C or D). If this is the, the prior art Figure 1 can perform the operation as recited in claims 1-12.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 5-7 and 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5 (line 2), claim 6 (line 2) and claim 7 (lines 2-3), the phrases "the first current level" and "the outputted current" both lack antecedent basis.

In claim 7, lines 3-4, it is unclear what is meant by "the current sources to summed being selected ...".

Claims merely recite used without any active, positive steps delimiting how these use are actually practice. Without reciting any practice, positive steps, claims 10-12 do not achieve the purpose of a method.

### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Chow (US 6,836,149 B2).

With respect to claims 1-12, Chow discloses an electronic circuit includes a selectively configurable differential signal interface and a selection control input for selecting one of a plurality of standard differential signal interfaces for configuration of the differential signal interface. The selection control input selects one of the following plurality of standard differential signal interfaces: reduced swing differential signaling (RSDS), low voltage differential signaling (LVDS), mini low voltage differential signaling (mini-LVDS), and bussed low voltage differential signaling (BLVDS), for configuration of the differential signal interface. The electronic circuit may also include a plurality of selectable voltage sources (611, 612, 613) and a plurality of selectable current sources (614, 615, 616, 617), for selecting, in response to an input signal at the selection control input, at least one of an operating D.C. voltage, a standard differential signal voltage, and a standard differential signal current for the differential signal interface (abstract).

Figure 2 illustrates a typical point-to-point configuration for a bus configuration using RSDS/LVDS/mini-LVDS/BLDVS interface standards. Point-to-point is the simplest bus configuration. The source (driver 202) is at one end, then the interconnecting media such as cables 210, and at the other end is a 100 ohm termination resistor 206 and the receiver 208. BLVDS also includes an additional termination resistor 204 at the source side. Due to the clean signaling path, a point-to-point bus supports the highest data rates (column 3, lines 58-66).



FIG. 6 and 7 illustrate the preferred embodiments of a new and novel circuit functioning in the display link driver 126 for transmitting differential signals adhering to industry interface standards. In particular, the new and novel driver 126 solves the problems with the prior art and provides the option of configuring the circuit to transmit signals meeting a variety of industry interface standards including RSDS, LVDS, mini-LVDS, and BLVDS, in a cost effective and reliable manner (column 4, lines 49-57).

In Figure 6, there are 4 control lines: R, L, M, and B, which select the standards RSDS, LVDS, mini-LVDS, and BLVDS respectively. A standard is selected by pulling the control line for the selected standard high. The remaining control lines must remain low. The control lines may be operated by another device such as a micro-controller, or may be hardwired to allow only the selected standard to function. As an example, assume R is pulled high. This switches on the NMOS transistor 610, which places the reference voltage of the selected voltage source 613 (1.3V) at the negative terminal of the operational amplifier 630. At the same time, Rp is pulled low by way of the inverter 606, which turns on the PMOS switch 621. This enables the current mirror 617 to turn on, which sets the current through the mimicking circuit at the correct level (2mA for RSDS) (column 5, lines 50-65).

The voltage drop from the drain of transistor 622 to the drain of transistor 629 of the mimicking circuit 631 mimics the voltage drop from the drain of transistor 635 to the drain of transistor 641 in the driving circuit 632. For RSDS, LVDS, and mini-LVDS, the total resistance of 623, 624, 625, and 626 is

$$R_a + R_b = R_{L1}$$

where  $R_{L1}$  is the termination resistance across the output terminals out and outb of the driving circuit 632. This is typically 100 ohms. For BLVDS, the switching transistors 643 and 627 are activated when control line B is pulled high. This shorts out resistors 623 and 626, thereby leaving only 624 and 625 ( $R_b$ ) to match with the termination resistance (typically less than 100 ohms) (column 5, line 66 to column 6, line 13).

The mimicking circuit 631 establishes the amount of drive current provided by transistor 635, and the sink current of transistor 641. The voltages at the drain of 635 and 641 are feedback to the positive terminals of the operational amplifiers 633 and 634 respectively. These voltages are compared to the reference voltages set by the MC 632 at the negative terminals of each OPAMP 633, 634 and the output voltages of 633 and 634 are adjusted accordingly, thereby controlling the amount of current through 635 and 641 and setting the nodes at the drains of 635 and 641 at a constant voltage equivalent to the differential swing voltage of the chosen standard (column 6, lines 14-25).

Figure 7 illustrates an alternative embodiment of the present invention of Figure 6.

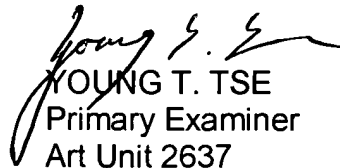
### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References Gasparik, Burrows et al., Ebuchi et al., Ramaswamy, and To et al. are made of record as describing a related transmitter comprising a driver and a control circuit for controlling the levels of the differential signal of the driver.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday-Thursday and alternative Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The Central FAX Number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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Art Unit 2637